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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,766

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Andrew Stuart Overend

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MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

BERMAN, SUSAN W

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,766	Applicant(s) OVEREND ET AL.	
	Examiner /Susan W. Berman/	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,9-11,13-15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,9-11,13-15,17 and 18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4-21-06,11-13-06</u> . | 6) <input type="checkbox"/> Other: ____. |

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 6, 13 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the abbreviations “BET” in claim 5 and “DBP” in claim 6 and both in claim 18 renders the claims indefinite. No definition of either “BET” or “DBP” is found within the specification so it is not clear what kind of surface area of what kind of absorption is intended. With respect to claims 13, the recitation in the definition of component (b) of 5 to 99 parts is not found within the specification. What is disclosed is 5 to 99.9 parts of component (b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 5-7, 9-11, 15 and 17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakajima (US 2003/0199612).

Nakajima et al disclose a radiation curable ink composition comprising a pigment dispersion, polymerizable compound and polymerization initiator. The pigments disclosed include Pigment 7, which is thought to be acidic carbon black [0044-0045 and "Preparation of Black Colorant Dispersion" in [0091]. Acrylates monomers are taught [0055-0057]. Initiators are taught in paragraphs [0071-0073]. Ink compositions comprising a mixture of mono-, di- and higher functional- (meth)acrylates are disclosed in Table 1.

Claims 1-3, 7, 9-11, 15 and 17 are rejected under 35 U.S.C. 102(e) as being unpatentable over WO 03/027162 in view of Ikeda et al (6,417,283).

WO '162 discloses compositions for ink jet inks comprising a pigment, such as carbon black, radiation curable dispersant, mixture of (meth)acrylate monomers and photoinitiators. See pages 13-16. The radiation curable dispersant contains a polar component, such as an amine (page 8). Ink jet ink viscosity is taught on page 19, lines 17-26, and ink jet printing is taught on page 30. WO '162 does not mention the acid value or pH of the pigment employed.

Ikeda et al disclose a carbon black graft polymer wherein the carbon black has a specific surface area not more than 120 m²/g. The high carbon content carbon black graft polymer exhibits improved dispersibility in water, organic solvents and organic high polymers (column 1,

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lines 6-10, column 3, lines 1-12). Carbon black having a specific surface area not more than 120 m²/g and an oil absorption, regarding dibutylphthalate, not more than 70 ml/100g and pH value less than 7 is taught in composition with a polymer having a reactive group reactive with a functional group on the carbon black (column 2, lines 24-32, column 3, line 48, to column 4, line 38, and column 17, lines 47-56). Use in ink-jet inks is taught in column 22, lines 57-65. Ikeda et al teach compositions comprising the grafted carbon black and (meth)acrylate monomers for a toner (column 23, line 31, to column 25, line 35).

It would have been obvious to one skilled in the art at the time of the invention to employ the grafted carbon black disclosed by Ikeda et al as the pigment in the compositions taught by WO '162. WO '162 provides motivation by teaching pigments, such as carbon black for the disclosed ink jet inks. Ikeda et al provide motivation by teaching that the disclosed grafted carbon black has improved dispersibility in organic solvents and organic high polymers and by teaching use in ink-jet inks. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of taking advantage of the improved dispersibility of the acidic grafted carbon black taught by Ikeda et al in the radiation curable ink jet ink compositions disclosed by WO '162.

Allowable Subject Matter

Claims 13, 14 and 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sun (6,402,825) discloses a surface modified carbon black that exhibits solubility in aqueous and organic media and exhibits excellent resistance to coagulation in an ink jet printhead. Steric inducing groups are added to the surface of carbon black, producing oxidized carbon black having an acid number from about 0.5 to about 1.5 meq COOH/g of carbon black (column 2, lines 38-62). The oxidized carbon black is then reacted with thionyl halide to produce acid halide groups on the carbon black surface. This product is then reacted with a steric inducing compound, such as monoalkoxy-terminated polyalkylene glycol or alkoxy-terminated Jeffamine polyethylene glycol, to lower the acid number. The resulting surface-modified carbon black has an acid number from about 0.1 to about 0.7 meq COOH/g carbon black (column 5, lines 4-9). Sun teaches using the improved carbon black in ink formulations for ink jet printers (column 1, lines 4-7).

Akers, Jr. et al (7,001,936, filed 7-16-2003) disclose pigmented inkjet inks comprising a self-dispersing pigment and an amino-containing compound. The carbon black can be oxidized to provide a self-dispersing carbon black having an acid number from about 0.5 to about 1.5 meq COOH/g carbon black (column 4, lines 31-42). Dispersants are disclosed in column 5. The difference from the instantly claimed inks is that Akers, Jr. et al teach an aqueous vehicle or an aqueous/organic solvent vehicle (column 6, lines 55-58). (Meth)acrylate monomers are not taught.

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WO 00/31189 discloses a solvent-free ink jet ink composition. The composition comprises carbon black, a rheological additive, free radical photoinitiator, and mono-, di- and tri-(meth)acrylate monomers (pages 6, lines 16-19, pages 14-15). It appears that the rheological additive acts as dispersant for dispersing the pigment into the curable monomers. A method of ink jet printing is taught on page 19. A DOD printer head filled with the ink is taught on page 36, lines 19-22.

JP 2000290548 discloses aqueous ink compositions comprising an acidic carbon black pigment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
9/29/2008

/Susan W Berman/
Primary Examiner
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